

PATENT SPECIFICATION

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(54) A CONTINUOUS REINFORCEMENT DISPENSER FOR CONCRETE PAVING

(71) We, ROBERT McGREGOR & SONS LIMITED, a British Company, of Turnoaks Lane, Birdholme, Chesterfield S40 2HB, England, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a reinforcement dispenser for dispensing reinforcement rods at spaced locations in advance of a concrete paver paving reinforced concrete pavement. At present, when producing continuously reinforced concrete pavement, the reinforcement is made into a reinforcing mesh and then supported on stools well ahead of the paving activity. Such a method of preparing the reinforcement precludes the use of the area well ahead of the paving and makes the reinforcement more susceptible to accidental damage. Additionally, if a polythene film slip is required under the pavement being constructed the polythene material is more likely to be displaced by wind (with perhaps the reinforcement as well) owing to the length of material it is necessary to lay out in advance of the paver.

An object of the present invention is to provide a reinforcement dispenser whereby the reinforcement is prepared as part of the paving operation.

According to the present invention there is provided a continuous reinforcement dispenser arranged in use to be moved in advance of a concrete paver during a paving operation comprising a support member curved along the direction of intended movement and providing downwardly inclined leading and trailing edges, means for supporting the dispenser for movement in the direction of advance of a paver, and a plurality of spaced guides on the support which in use, on movement of the dispenser, receive and space a number of reinforcement rods into spaced locations in front of a paver.

Preferably the reinforcement dispenser comprises a plate supporting a number of blocks spaced apart so as to form guides. On movement of the dispenser each guide

receives a reinforcement rod separated from a bundle of rods laid out in the line of paving. The plate is substantially rectangular in shape and has a lateral extension at each of its corners supporting a wheel so that the dispenser may conveniently move directly over the ground or on a temporarily laid track.

The invention also includes a method of paving reinforced concrete carriageway comprising providing bundled longitudinal reinforcement rods in advance of a concrete paver, moving a reinforcement dispenser having spaced guides in advance of the paver to separate the bundled longitudinal reinforcement rods into a desired spacing and feeding the reinforcement rods so separated into the wet concrete being laid by the paver.

The invention will now be described by way of example with reference to the accompanying drawings in which:—

Figure 1 is a plan view of a reinforcement dispenser and the front of a concrete paver;

Figure 2 is a side view of the reinforcement dispenser and concrete paver of Figure 1;

Figure 3 is a sectional view on B—B of Figure 2 with an alternative inset portion; and

Figure 4 is a sectional view on A—A of Figure 2.

In the drawings a reinforcement dispenser 1 has a suspended curved plate 2 which, adjacent a leading edge, supports a number of blocks 3 spaced apart to form guides 4 of a primary spacer. Disposed parallel to the primary spacer and intermediate the leading edge and a trailing edge of the plate 2 is a secondary spacer 5 which presents guide grooves 6 aligned with the guides 4 of the primary spacer.

The curved plate 2 is substantially rectangular in plan and has at each corner a lateral extension 7 supporting a wheel 8 so that the plate 2 is suspended above the ground with downwardly inclined leading and trailing edges. In this way the reinforcement dispenser 1 may be mounted either on a temporary rail 9 as shown or may simply

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rest on the ground (see the modification shown on the left-hand side of Figure 3).

- The drawings also illustrate a conventional guide roller 10 affixed between the front wings 12 of a paver (see dotted lines in Figure 2) which picks up the spaced reinforcement and feeds it to the wet concrete 13 of the paver at the correct horizontal and vertical alignment.
- 5 In operation a bundle of longitudinal reinforcement rods is laid out in advance of a paver paving a concrete roadway or the like. The rods are then initially separated into the guides 4 and 6 of the reinforcement dispenser at the start of paving. Once so separated forward movement of the reinforcement dispenser will continue to separate the rods from the bundle as an automatic operation. In providing reinforcement for concrete paved carriageways the reinforcement is usually in the form of a mesh —see Figure 1, therefore once the rods have passed to primary spacer of the dispenser a transverse rod 11 is welded across the longitudinal rods. The welding of the transverse rods can either be done by welding all points of contact or by welding the outermost longitudinal rods and clipping the inner ones. Further advance of the dispenser 1 moves 10 the reinforcement mesh over the secondary spacer 5 the guide grooves of which are of a shallow depth so that they are not fouled by the newly fixed transverse rods (Figure 2 illustrates diagrammatically a typical disposition of reinforcement mesh during a paving operation).

15 The reinforcement dispenser of this invention may be moved in several alternative ways e.g. it may be pushed by the paver, or it may be pulled by a separate machine or may be self-propelled.

20 By spacing the reinforcement rods with the device of the invention the reinforcement is fabricated as a part of the paving operation. If a polythene base is to be used the polythene film need only be spread a short distance ahead of the paving machine as during the paving of unreinforced carriageway so that displacement due to wind etc is minimised.

25 Although only one reinforcement dispenser has been described it is understood that several reinforcement dispensers may be used or the dispenser described may be formed with more than two sets of spacers.

WHAT WE CLAIM IS:—

1. A continuous reinforcement dispenser arranged in use to be moved in advance of a concrete paver during a paving operation comprising a support member curved along the direction of intended movement and providing downwardly inclined leading and trailing edges, means for supporting the dispenser for movement in the direction of advance of a paver, and a plurality of spaced guides on the support which in use, on movement of the dispenser, receive and space a number of reinforcement rods into spaced locations in front of a paver. 60
2. A continuous reinforcement dispenser according to claim 1 wherein the support member is a rectangular curved plate on which a number of blocks are supported and spaced apart to form the spaced guide therebetween. 65
3. A continuous reinforcement dispenser according to claim 2 wherein the plate has a lateral extension at each of its corners supporting a wheel whereby the plate is suspended above the ground. 70
4. A continuous reinforcement dispenser according to claim 2 wherein the blocks are aligned adjacent the front end of the plate and form a primary spacer, a secondary spacer disposed parallel with the primary spacer being mounted intermediate the front and rear ends of the plate and having a plurality of guide grooves one aligned with each of the spaced guides of the primary spacer. 75
5. A method of paving reinforced concrete carriageway comprising providing bundled longitudinal reinforcement rods in advance of a concrete paver, moving a continuous reinforcement dispenser having spaced guides in advance of the paver to separate the bundled longitudinal reinforcement rods into a desired spacing and feeding the reinforcement rods so separated into the wet concrete being laid by the paver. 80
6. A continuous dispenser substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing. 85
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1499012

COMPLETE SPECIFICATION

2 SHEETS

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the Original on a reduced scale
Sheet 1

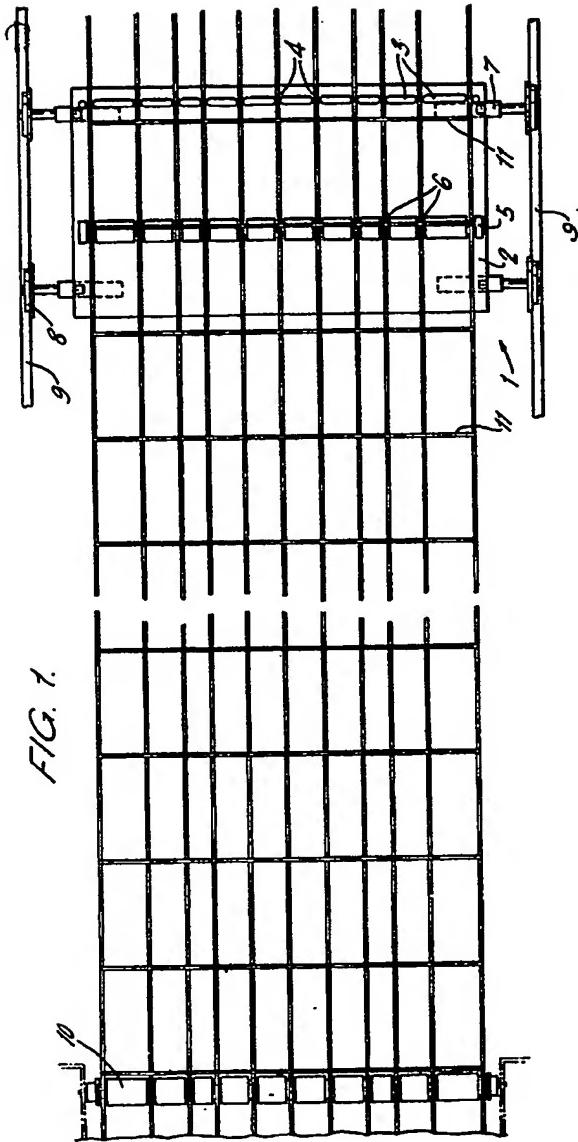
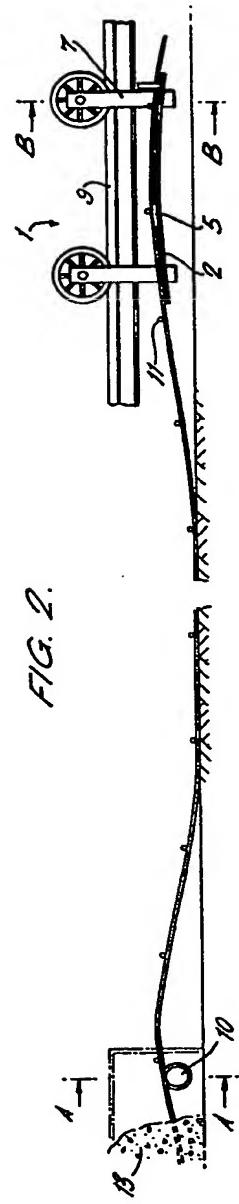


FIG. 1.



1499012 COMPLETE SPECIFICATION

2 SHEETS

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Sheet 2

FIG. 3.

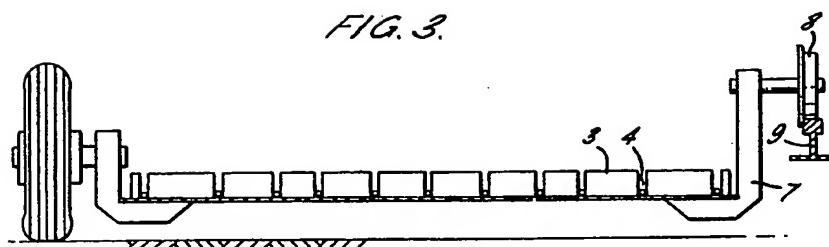


FIG. 4.

